ABSTRACT

A satellite television system that provides live television programming to passengers by integrating direct broadcast satellite services into an in-flight aircraft entertainment system. The system has an antenna disposed on the aircraft that is pointed at a plurality of satellites that are part of a direct broadcast satellite system. The antenna is controlled by an antenna controller and antenna interface unit that send control signals and process status signals to steer the antenna. The antenna is steered to lock it onto RF signals transmitted by the satellites. The antenna interface unit downconverts the received encoded RF signals to provide encoded left hand circularly polarized RF signals and right hand circularly polarized RF signals that contain different sets of television channels. The downconverted encoded RF signals are processed by a receiver to provide encoded video and audio signals of different television channels. The receiver does not decode or D/A convert the downconverted signals. The encoded video and audio signals containing the plurality of channels are modulated in a modulator, which also is used as a combiner to modulate signals derived from other video and audio sources. The modulated and encoded video and audio signals are routed to a video and audio distribution system which distributes the encoded video and audio signals to each passenger's seat. Seat electronics circuitry is located at each passenger's seat that contains a demodulator, decoder, digital to analog converters, and an optional tuner. The seat electronics circuitry demodulates, decodes and D/A converts the modulated and encoded video and audio signals into signals that may be viewed and heard by the passenger at that seat.